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10/590,930	01/29/2007	Sang-Hwa Cho	750650-0605	3772

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KELLEY DRYE & WARREN LLP
3050 K STREET, NW
SUITE 400
WASHINGTON, DC 20007

EXAMINER

HASAN, MOHAMMED A

ART UNIT	PAPER NUMBER
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2873

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06/16/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,930	Applicant(s) CHO ET AL.	
	Examiner Mohammed Hasan	Art Unit 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 20-28 and 36-57 is/are rejected.
- 7) ☒ Claim(s) 11-19 and 29-35 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt of acknowledged of papers submitted under 35 U.S.C. 119 (a) – (d), which papers have placed in the file.

Oath/Declaration

2. Oath and declaration filed on 1/29/2007 is accepted.

Specification

3. The abstract of the disclosure is objected to because “Abstract” need separate page. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

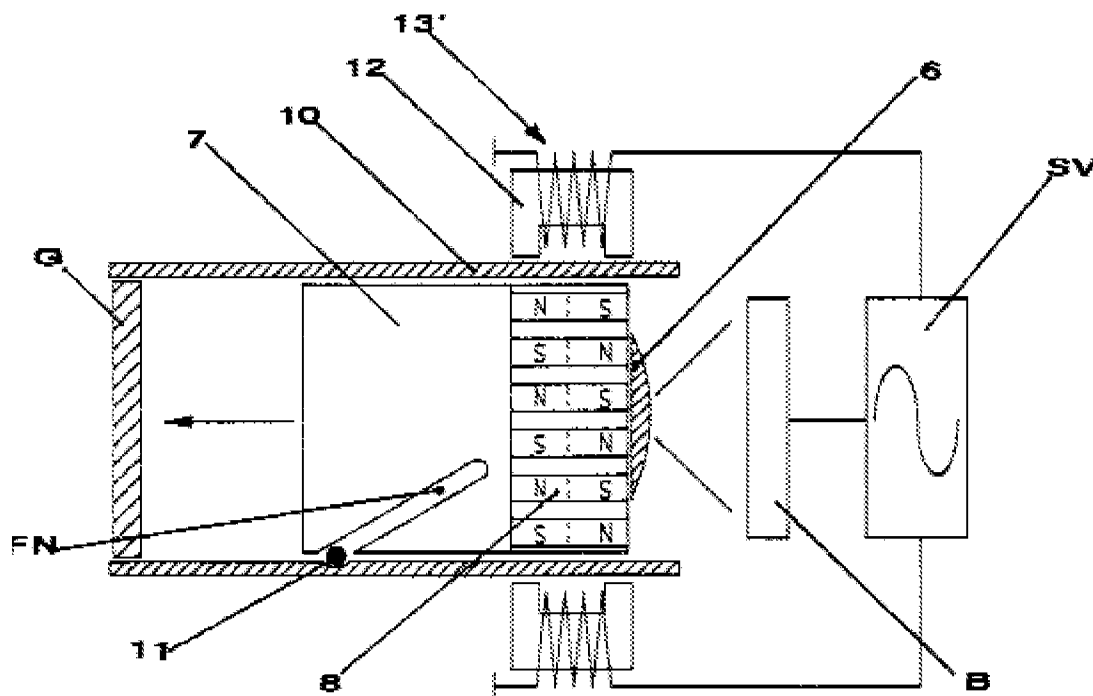
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 10,20-28,36-57 are rejected under 35 U.S.C 102(b) as being anticipated by Lemke (5,978,161)

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Regarding claim 1, Lemke discloses (refer to figures 2-7) A compact camera device (4) for communication devices, comprises: a base (7) ; a lens group (6) for converting an image of an object to a certain magnification; an image sensor (B) for picking up an image of an object projected from said lens group, said image sensor being fixed at the base; a driving section for finely moving said lens group in an optical axis direction; and a control unit (SV) for outputting electrical control signals to said driving section to vary the image magnification of the object, said control unit driving said image sensor (column 3, lines 60-67, column 4, lines 1 -35, column 6, lines 1-12).



Regarding claim 2, Lemke discloses (refer to figures 2a) wherein lens group comprises: a fixed lens group (6) which is fixed at said base and which is aligned with

imagesensor in the optical axis direction; and a movable lens group which changes its position in the optical axis direction by driving section to vary a magnification.

Regarding claim 3, Lemke discloses , wherein driving section comprises:
a magnet (8) which is fixed at any one side of either base or movable lens group and of which polarity is divided in the optical axis; and a coil for generating a magnetic field toward said magnet responsive to said electrical signals, said coil being fixed at the other side of either said base or said movable lens group (as shown in figure 2a).

Regarding claim 4, Lemke discloses, wherein coil (13') is provided with a yoke for concentrating the magnetic flux to said 5 magnet and circulating the magnetic flux (as shown in figure 7).

Regarding claim 5, Lemke discloses wherein magnet is fixed at said movable lens group; said coil is made of a pair of coils (13'); and pair of coils are respectively installed at both ends of a path where magnet moves (as shown in figure 7).

Regarding claim 6, Lemke discloses , wherein control unit applies a strong electric current to said coil to thereby move movable lens group at a large width in order to perform an optical zoom (as shown in figure 7).

Regarding claim 7, Lemke discloses, wherein control unit applies a weak electric current to coil to thereby move movable lens group (6) at a slight width in order to make a focal point of an image to be picked up by said image sensor (as shown in figure 7).

Regarding claim 8, Lemke discloses , wherein base comprises a guide shaft which is fixed at said base in the optical axis direction; and movable lens group (6) is fixed at a first lens barrel which includes a guide hole for passing through said guide shaft .

Regarding claim 9, Lemke discloses ,, wherein base includes a restoring means for pressurizing said movable lens group to its photographing position (as shown in figure 7).

Regarding claim 10, Lemke discloses, wherein restoring means is a compression spring, which comprises the first lens barrel for fixing movable lens group, compression spring exerting an elastic force to first lens barrel (as shown in figure 7).

Regarding claim 20, Lemke discloses, wherein driving section comprises:
a lens holder for fixing said lens group so that said image sensor can be aligned with the optical axis; a coil which is wound at said lens holder to be fixed;
a plate spring, one end of which is fixed at said base and the other end of which is connected to said coil (13') to restore said coil to its initial position; and a magnet fixed at said base which applies a magnetic flux to said coil to generate an electromagnetic force to actuate said lens holder in the optical axis direction, characterized in that control unit applies electrical signals to said coil through plate spring (as shown in figure 7) .

Regarding claim 21, Lemke discloses ,wherein compact camera device further comprises initial position setting means installed to base for setting an appropriate initial position of lens holder (as shown in figure 2a).

Regarding claim 22, Lemke discloses, wherein driving section comprises:
a lens holder for fixing said lens group so that said image sensor can be aligned with the optical axis; a coil (13') which is wound at lens holder to be fixed; a magnet (8)

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fixed at base, which applies a magnetic flux to said coil to generate an electromagnetic force which actuates said lens holder in the optical axis direction when power (SV) is applied to said coil; and initial position setting means installed to said base for setting an appropriate initial position of said lens holder, characterized in that said control unit applies electric signals to coil (column 6, lines 1-12).

Regarding claim 23, Lemke discloses wherein initial position setting means comprises: a second guide shaft fixed at said base in the optical axis direction; a lever wherein a second shaft hole is formed so as to rotate on said second guide shaft and wherein a slope is formed at the upper part; and a lifting prominence which is formed at the lens holder, and which contacts the slope to be raised and lowered by said lever (as shown in figure 3).

Regarding claim 24, Lemke discloses , wherein compact camera device further comprises guide means for guiding lens holder so as to move in the optical axis direction (as shown in figure 2a).

Regarding claim 25, Lemke discloses, wherein guide means comprises: a first guide shaft fixed at said base in the optical axis direction; and a shaft holder which is formed at said lens holder and which has a guide hole coupled to guide shaft so as to be slidable in the optical axis direction (as shown in figure 3).

Regarding claim 26, Lemke discloses wherein compact camera device comprises a magnetic circulation yoke for inducing a magnetic flux of magnet to coil (as shown in figure 7).

Regarding claim 27, Lemke discloses, wherein a cover, which protects lens

holder and said driving section from the outside and which has a light passing hole passing a light to lens group, is coupled to said base (as shown in figure 3).

Regarding claim 28, Lemke discloses, wherein lens group comprises a filter at the upper side of said image sensor to block the infrared rays (as shown in figure 7).

Regarding claim 36, Lemke discloses wherein driving section comprises: a lens holder for fixing lens group as image sensor (B) is aligned with the optical axis; a coil for generating a magnetic field in the optical axis direction when an electric current is applied, coil (13') being wound at one side of either said base or lens holder; a magnet for actuating said lens holder by a repulsive force with the magnetic field of coil, magnet being fixed at the other side of either said base or said lens holder to which said coil is not fixed; and an initial position setting means installed to said base for adjusting an initial position of lens holder, characterized in that said control unit applies power to coil to adjust the focusing of lens group (6) (as shown in figure 3).

Regarding claim 37, Lemke discloses wherein initial position setting means comprises: a lever which forms a slope for raising or lo-wiring lens holder in the optical axis direction, lever being supported by base so as to be rotatable; and an elastic member for pushing said lens holder toward lever (as shown in figures 3-7).

Regarding claim 38, Lemke discloses, wherein compact camera device further comprises guide means for guiding said lens holder so as to move in the optical axis direction.

Regarding claim 39, Lemke discloses wherein guide means comprises:

a first guide shaft fixed at said base in the optical axis direction; and

a shaft holder having a shaft hole which is coupled to said guide shaft so as to be slidable in the optical axis direction, said shaft holder being formed at lens holder.

Regarding claim 40, Lemke discloses, wherein guide means comprises:

a guide protrusion formed at said lens holder; and a guide groove for guiding said guide protrusion so as to be slidable in the optical axis direction, guide groove being formed at base in the optical axis direction (as shown in figure 3).

Regarding claim 41, Lemke discloses wherein compact camera device (4) comprises a yoke for circulating the magnetic flux of magnet (as shown in figure 2a).

Regarding claim 42, Lemke discloses wherein compact camera device further comprises: a fixing block coupled to base; and pipe pins which are coupled so as to pass through fixing block and which have a cavity through which a lead wire connected to coil passes (as shown in figure 7).

Regarding claim 43, Lemke discloses wherein lens group consists of a plurality of lenses (6) which convert an image of an object to a certain magnification and which is installed so as to freely move in the optical axis direction as image sensor (B) is aligned with the optical axis; and wherein driving section comprises a coil which is wound at one side of either said base or lens group; a magnet fixed at the other side of either said base or lens group; and a yoke induces the magnetic flux of said magnet to generate an electromagnetic force which actuates lens module in the optical axis

direction when power is applied to coil, characterized in that said control unit applies electric signals to coil (as shown in figure 7).

Regarding claim 44, Lemke discloses wherein control unit (SV) applies a weak electric current to said coil to move lens group at a small width to thereby clarify the focus of the image of the object which is passed through each lens of said lens group and is picked up by said image sensor.

Regarding claim 45, Lemke discloses wherein compact camera device (4) further comprises guide means for guiding movable lens group so as to move in the optical axis direction (as shown in figure 7).

Regarding claim 46, Lemke discloses wherein guide means consists of a guide shaft which is fixed at base in the optical axis direction and which is coupled to guide hole formed at said lens group so as to be slidable in the optical axis direction (as shown in figure 7).

Regarding claim 47, Lemke discloses wherein compact camera device comprises restoring means for restoring said lens module to its initial position (as shown in figure 7).

Regarding claim 48, Lemke discloses wherein restoring means comprises a compression spring which is supported by a cover surrounding said lens module to exert an elastic force to said lens module (as shown in figure 7).

Regarding claim 49, Lemke discloses wherein compact camera device further comprises: a lens holder for fixing said lens group; and a suspension member for supporting said lens holder so as to freely move on base in the optical axis direction,

characterized in that driving section actuates lens holder on base in the optical axis direction (as shown in figure 7).

Regarding claim 50, Lemke discloses wherein suspension means comprises at least two elastic members for maintaining the balance of said lens holder by exerting an elastic force at both sides of the optical axis, suspension means being supported on base (as shown in figure 10).

Regarding claim 51, Lemke discloses, wherein driving section comprises: a coil (13') which is fixed at any one side of either said base or said lens holder, which is wound in the orthogonal direction of the optical axis, and to which power is supplied from control unit; and a magnet which is fixed at the other side of either said base or said lens holder and which provides a magnetic flux in the orthogonal direction of the optical axis (as shown in figure 7).

Regarding claim 52, Lemke discloses wherein driving section further comprises a yoke of a magnetic substance for restoring the magnetic flux, which has passed coil (13'), to magnet (8) (as shown in figure 7).

Regarding claim 53, Lemke discloses wherein yoke comprises: a supporting portion for supporting magnet; and an inserting portion which is integrated with said supporting portion and which is installed through the center of coil (as shown in figure 3-7).

Regarding claim 54, Lemke discloses wherein lens holder comprises a bobbin which is wound around said coil and which has a cavity so that said inserting portion can pass through the center thereof (as shown in figure 3-7).

Regarding claim 55, Lemke discloses wherein control unit detects a focusing error of lens group from the output signals transmitted from said image sensor, and actuates said lens holder when a focusing error 0 occurs, thereby making an image of an object to be clear (as shown in figure 3-7).

Regarding claim 56, Lemke discloses, wherein compact camera device further comprises guide means for guiding said lens holder so as to move in the optical axis direction (as shown in figure 3-7).

Regarding claim 57, Lemke discloses wherein guide means comprises:
at least one guide shaft fixed at said base in the optical axis direction; and
a shaft holder which is formed at said lens holder and which has a shaft hole coupled to said guide shaft so as to be slidable in the optical axis direction (as shown in figure 3-7).

Allowable Subject Matter

5. Claims 11-19, and 29-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show a fixed lens group fixed at said base which is aligned with said image sensor in the optical axis direction; and a movable lens group installed so as to finely move in the optical axis direction, wherein said driving section comprises:

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a first driving section for actuating said movable lens group from a common photographing position to a 1-time zoom magnification photographing position; and a second driving section for actuating said movable lens group from the 1-time zoom magnification photographing position to a 2-times zoom magnification photographing position, and wherein said control unit controls said first driving section and said second driving section to vary respective image magnification and wherein driving section comprises: a lens barrel for aligning each lens of lens group in the optical axis direction; a suspension member for raising lens barrel from base so that lens barrel can finely move at a predetermined interval away from image sensor; and an adjustment section for adjusting the gap between lens group and image sensor to clarify the image which has passed through said lens group and then is picked up by image sensor.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The closest prior art Tanaka et al (5,748,391) discloses a camera with vibration compensation device having antivibration lens urging mechanism and feed screw mechanism and Umeyama et al (5,490,015) discloses an actuator apparatus.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammed Hasan whose telephone number is (571) 272-2331. The examiner can normally be reached on M-TH, 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky L Mack can be reached on (571) 272- 2333. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mohammed Hasan/
Primary Examiner, Art Unit 2873
6/11/2008

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